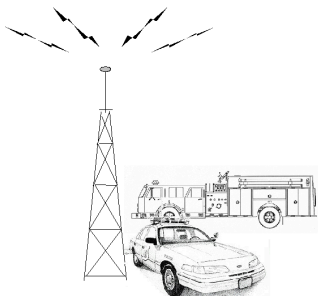


# PCWIN Briefing

September 15, 2009



**Captain Paul Wilson**  
**PCWIN Administrator**

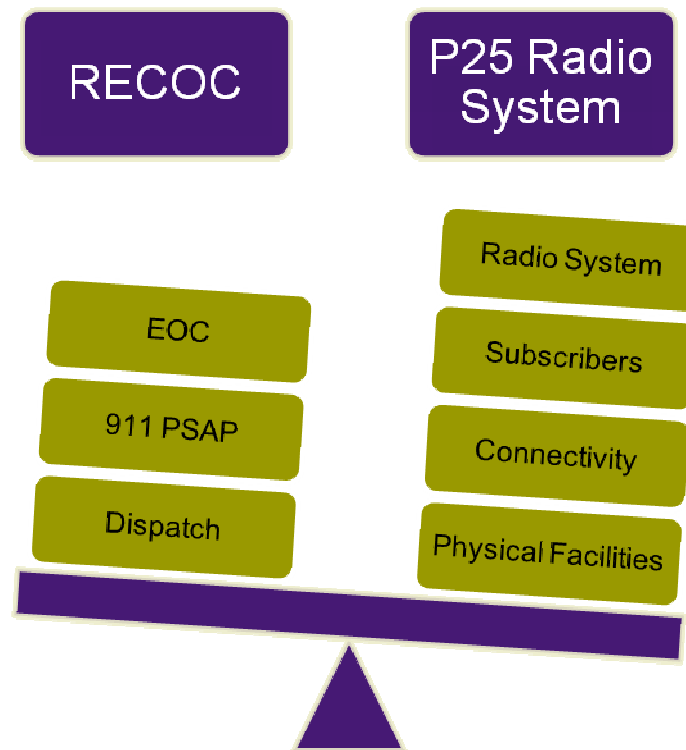


**PIMA COUNTY WIRELESS INTEGRATED NETWORK**

PUTTING PIMA COUNTY IN A BETTER STATE OF COMMUNICATION

# PCWIN Mission

*The mission of the PCWIN is to design, procure, deploy and operate a regional public safety voice communications network; improve public safety radio interoperability; and to design, construct and operate a regional communications center .*



# Regional Emergency Communications & Operations Center



- Tucson Police Department
- Tucson General Services Department (Fire Department Dispatch Provider)
- Pima County Sheriff's Department
- Pima County Fire Districts
- Pima County OEM & Homeland Security
- Pima County Emergency Operations Center



## RECOC Facility Details

- Expanding an existing building purchased for this purpose
- Approx. 67,000 gsf
- 3 dispatch operation floors
- 55 dispatch consoles
- 40 call taker positions
- 4,500 gsf EOC



# Voice Communications System

## Fire Agency Participants

- Ajo/Gibson Volunteer Fire
- Arivaca Volunteer Fire
- Avra Valley Fire District
- Corona de Tucson Fire District
- Drexel Heights Fire District
- Elephant Head Volunteer Fire
- Golder Ranch Fire District
- Green Valley Fire District
- Helmet Peak Fire District
- Mt. Lemmon Fire District
- Northwest Fire District
- Pascua Pueblo Fire
- Picture Rocks Fire District
- Rincon Valley Fire District
- South Tucson Fire
- Three Points Fire District
- Tohono O'odham Fire
- Tucson Airport Authority Fire
- Tucson Fire
- Why Fire District



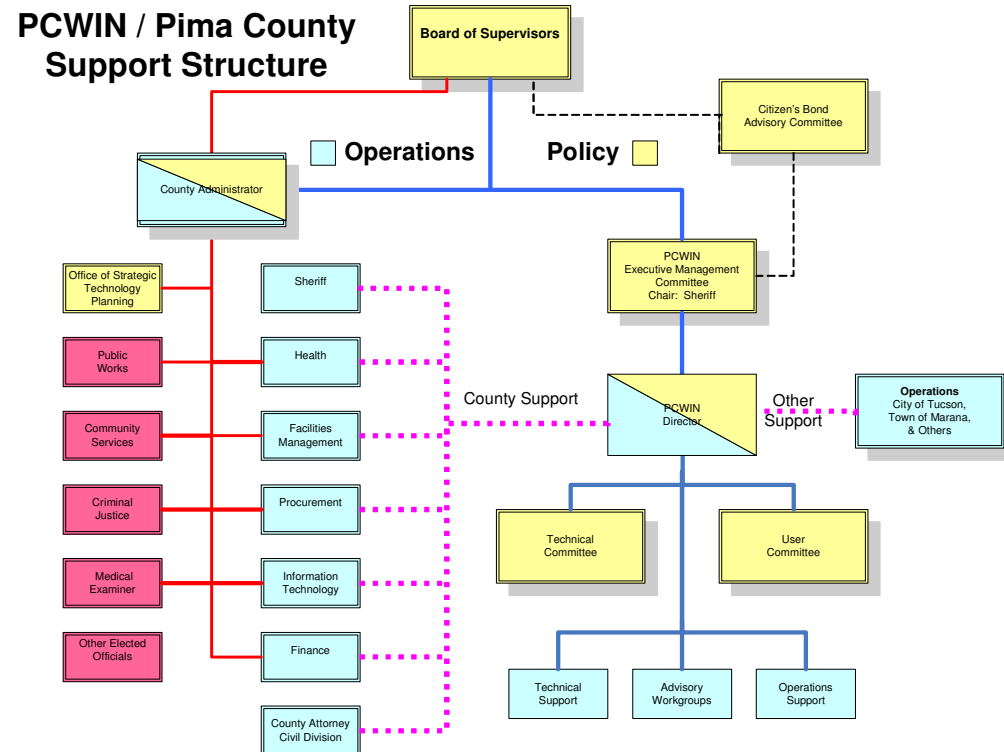
# Voice Communications System Police & Emergency Management Participants

- Marana Police
- Oro Valley Police
- Pascua Yaqui Police
- Pima College Department of Public Safety
- Pima County Sheriff's Department
- Sahuarita Police
- South Tucson Police
- Tohono O'odham Tribal Police
- Tucson Airport Authority
- Tucson Police
- University of Arizona Police
- Pima County OEM & Homeland Security



# Governance & Support

- Executive Management Committee
- User Committee
- Technical Committee



9-19-07



# Business Plan

- Self sustaining system
- Costs shared proportionately
- Reuse of existing infrastructure where possible
- Jurisdictions contributing assets retain control and ownership of the asset
- Centrally managed maintenance operations
- Initial implementation includes subscriber equipment
- Individual agencies responsible for subscriber equipment replacement
- Process and description of responsibilities for new clients applying to join the system
- Minimum requirements for voluntary withdrawal from the system





# PCWIN

## Motorola ASTRO25 Radio System Design

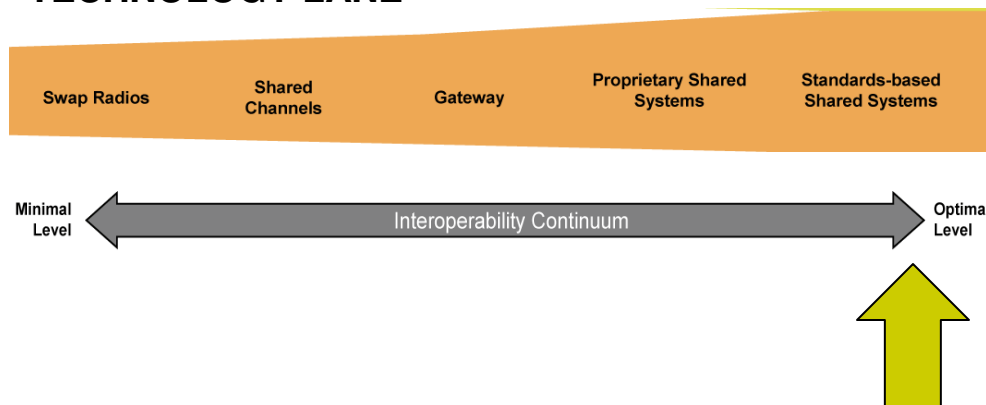
- Digital P25 Phase II TDMA
- 800 MHz band
- 7,716 Public Safety Subscribers
- 959 Pima County Non-Public Safety Subscribers
- 104 Dispatch consoles at 13 locations
- APX line of next-generation mobile and portable radios
- MCC7500 dispatch consoles
- Over-the-air programming (OTAP)



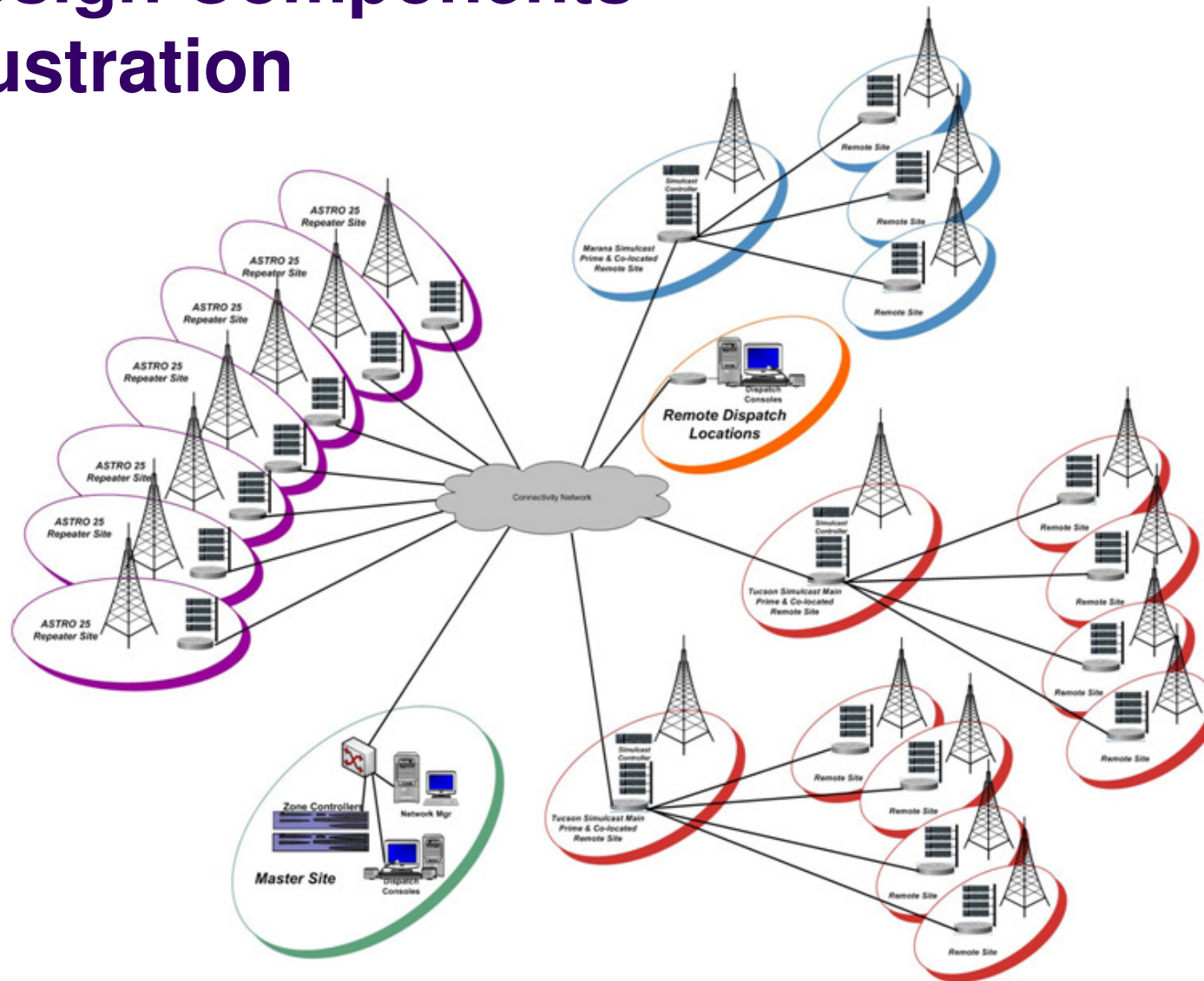
# Interoperability

- Shared system interoperability for 32 participating agencies
- AIRS
- Mutual aid channels
- Conventional channel dispatch console interfaces
- Motorola Dual Dynamic Mode (Option)
- ISSI (Option)

## SAFECOM INTEROPERABILITY CONTINUUM TECHNOLOGY LANE



# Design Components Illustration



**Figure 9-3  
Pima County**

Client: PCWIN

Commission No. 20099C

Test Sectors Coverage: Mobile

Sector 8  
Sector 9  
Sector 10  
Sector 11

Coverage displayed on this document is the result of predictive statistical modeling based upon client provided parameters, and USGS geographical data. Actual coverage as experienced by users in the field may vary due to interference, multi-path fading, and other random effects.

Design: MDS 19 July 2007

Drawn: TRM 24 March 2008

Checked: HWW 08 May 2007

Approved: KAS 09 May 2007

File Name: M:\FILES\20099 Pima County, AZ  
20099C - Procurement Technical Specification  
coverage\Figure 9-3 rev 5.pdf

Revised:

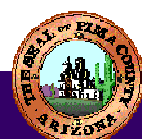
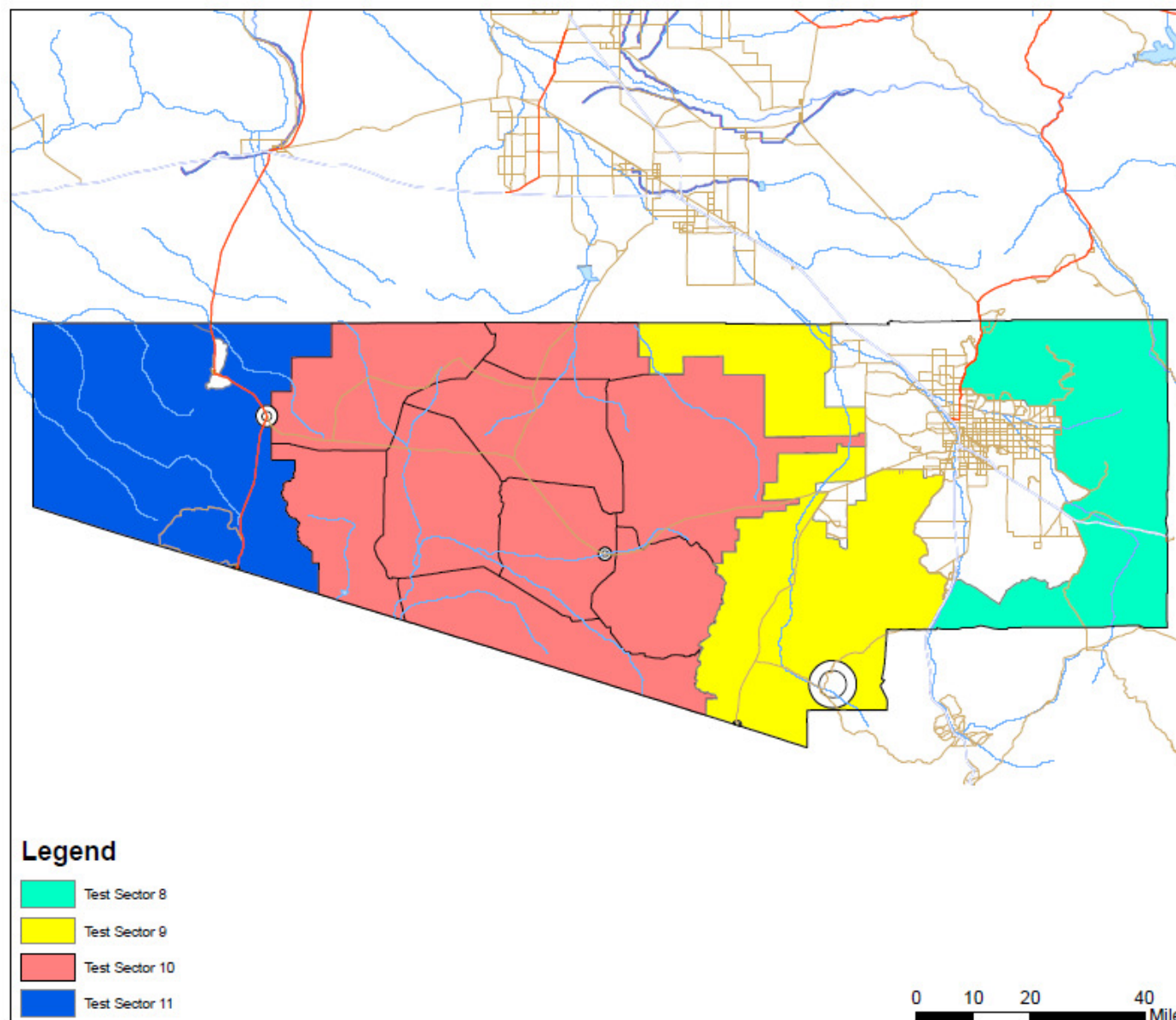
**CTA Communications, Inc.**  
20715 Timberlake Road  
Lynchburg, Virginia 24502-7217

COMMUNICATIONS

an HMM Company



www.CTACommunications.com  
+1 (434) 239-9200



**Figure 9-1  
Pima County**

Client: PCWIN

Commission No. 20099C

**Test Sectors Coverage:**

Sector 1A, 1B, 1C, 1D, and 1E  
Sector 2A, 2B, and 2C  
Sector 3A and 3B  
Sector 4A  
Sector 6A and 6B

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Design: MDS 19 July 2007

Drawn: TRM 13 June 2007

Checked: HNW 08 May 2007

Approved: KAB 09 May 2007

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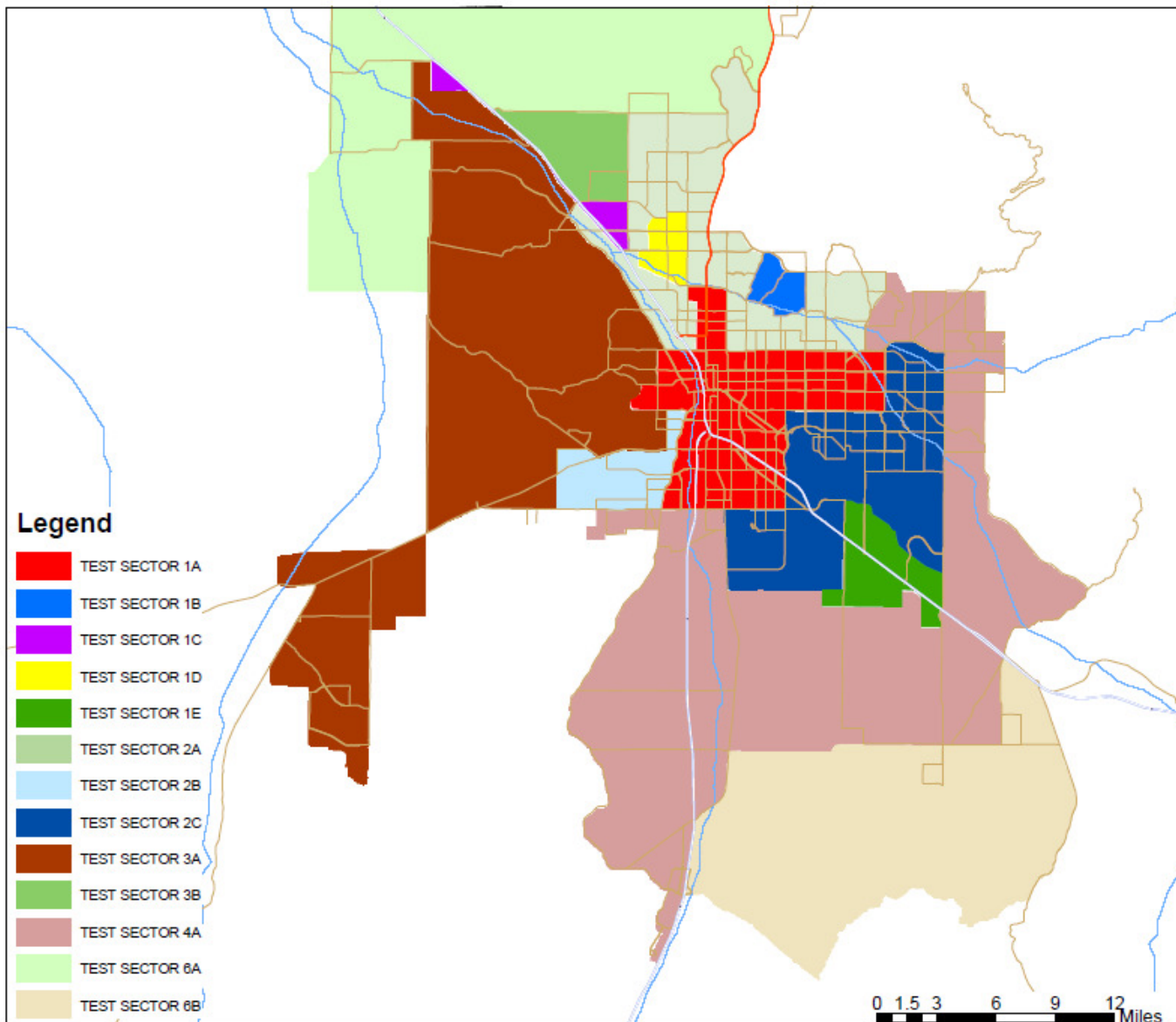


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**Figure 9-2  
Pima County**

Client: PCWIN

Commission No. 20099C

Test Sectors Coverage:

Sector 5A, 5B, 5C, 5D, 5E, and 5F  
Sector 7A, 7B, 7C, 7D, 7E, 7F, and 7G

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Design: MDS 19 July 2007

Drawn: TRM 18 March 2008

Checked: HWW 25 April 2007

Approved: KAS 28 April 2007

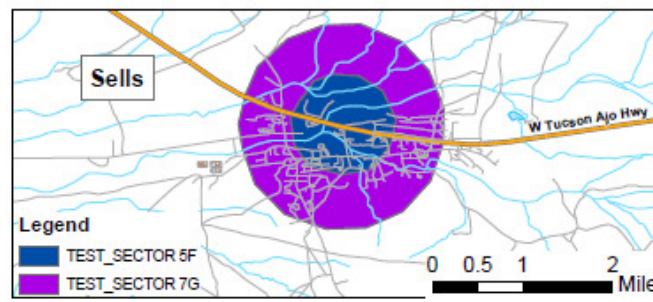
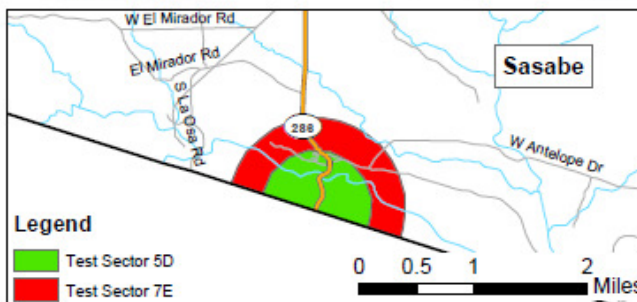
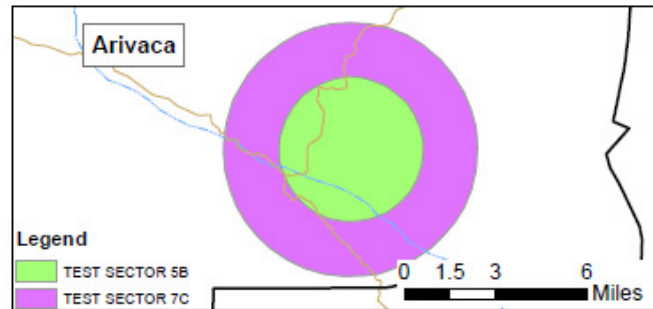
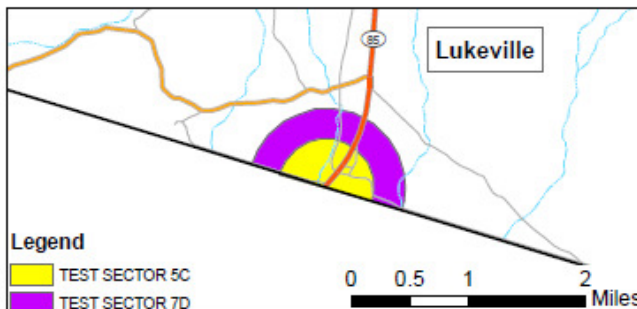
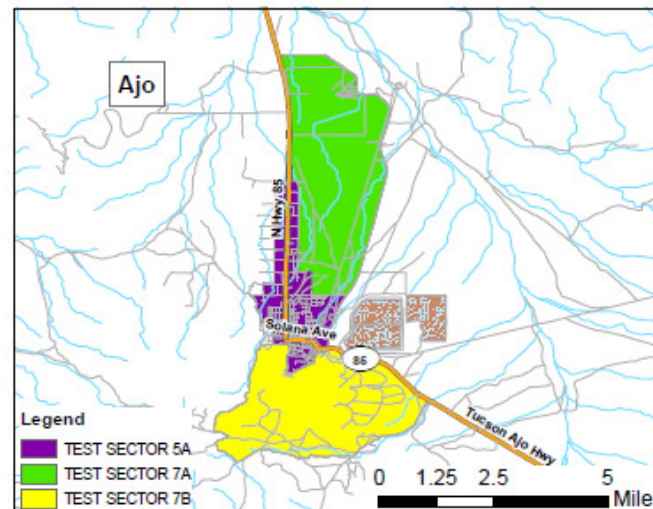
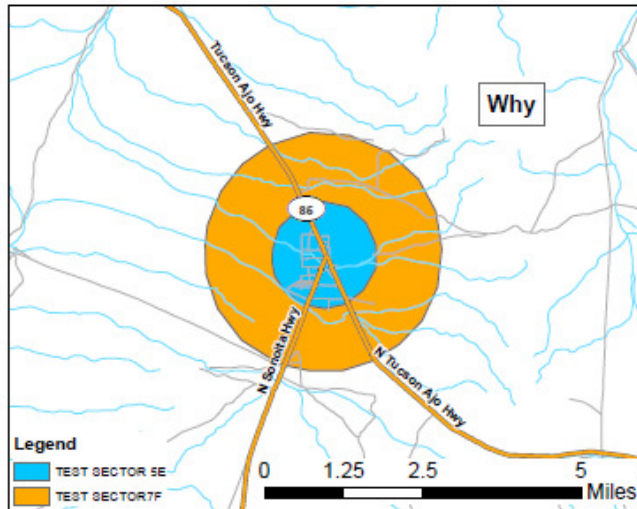
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20099C - Procurement Technical Specification  
coverage\Figure 9-2 Rev 5.pdf

Revised:

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# Coverage Criteria

- In-building Portable
  - Heavy Buildings (20 DB Penetration Loss)
  - Medium Buildings (12 DB Penetration Loss)
  - Light Buildings (8 DB Loss)
- Portable on Street
  - Hip-mounted (Belt Clip) @ 3.5 Feet (Antenna)
  - Public Safety Speaker-mic At Shoulder Level
- Mobile Coverage
  - Roof-mounted Antenna
  - Minimum Requirement For Countywide Coverage



# Fire Ground Communication Solutions

- Trunked, simulcast system operation
- Simplex analog “talk-around” channels
- Digital Vehicular Repeaters
  - Repeat local fire-ground communications
  - Repeat local fire-ground communications to trunked system for dispatch monitoring and recording





# Connectivity Network

- Mix of Microwave and Fiber
- Interconnecting Rings For High Reliability
- Monitored Hot Standby Spurs To Some Remote Sites
- OC-3 SONET Configuration On Most Links
- Leverages Existing Infrastructure
  - AZ DPS Microwave
  - City of Tucson Microwave/Fiber
  - Town of Marana Microwave
  - Tohono O'odham Microwave
- Scalable Network Design



# Next Steps

- PCWIN Business Plan update
- Hire Assistant Project Manager
- Complete Work Breakdown Structure and Baseline Master Project Schedule
- Complete microwave procurement
- Complete specifications for physical facility improvements
- Site acquisition
- Radio system detail design review
- Bid physical facility improvements
- RECOC schematic design
- RECOC construction documents
- Landlord tenant leases



Questions?

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Tucson, AZ 85701

